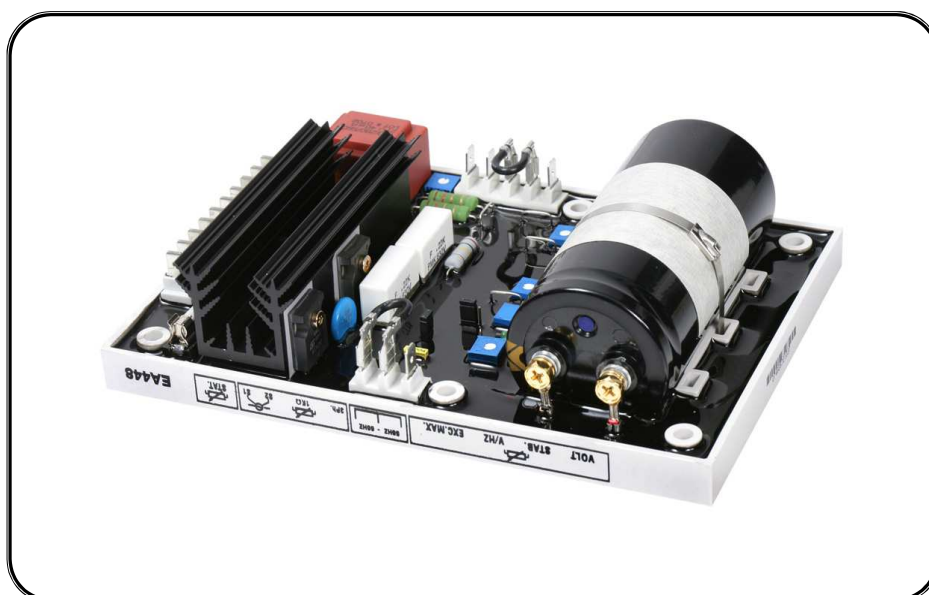


EA448

Generator Automatic Voltage Regulator Operation Manual



Permanent Magnet Generator or A.R.E.P or Auxiliary Winding Type
Compatible with Leroy Somer R448*

* Use for reference purpose only and not a genuine Leroy Somer product.



固也泰電子工業有限公司
KUTAI ELECTRONICS INDUSTRY CO., LTD.



Headquarters : No.3, Lane 201, Chien Fu ST., Chyan Jenn Dist., Kaohsiung, TAIWAN

Tel : + 886-7-8121771

Fax : + 886-7-8121775

URL : <http://www.kutai.com.tw>

1. SPECIFICATION

Sensing Input

Terminal	0 ~ 110V = 95 ~ 140V 0 ~ 220V = 170 ~ 260V 0 ~ 380V = 340 ~ 520V
Frequency	50 / 60 Hz, selectable

Power Input

Voltage	40 ~ 150 VAC, 3 phase
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Output

Voltage	Max 160VDC @120VAC
Current	Max 10 A

Voltage Regulation

< $\pm 0.5\%$ (with 4% engine governing)

Voltage Build-up

Residual voltage at AVR terminal > 5 VAC

External Volts Adjustment

$\pm 10\%$ @ 1K ohm

Response Time

0.3 ~ 1sec @ $\pm 20\%$ Voltage Vibration

Current Droop

2 sec. Max 7% @ P.F. = 0.7

Auxiliary Winding

6~150VAC (No load rms)

LAM Voltage Drop Rate

4.5~6.5V/Hz @ 220VAC selectable

Dimensions

203mm L * 153mm W * 60.5mm H

Weight

950g $\pm 2\%$

2. OPERATION PROCEDURE

2.1 Jumper Adjustment

1. ST1 : Connected wire ST1 for Single phase measurement. Cut wire ST1 for three phase measurement.
2. ST2 : Response Time : Fast (disconnected) / Slow(Connected) Select.
PS : It should do stable adjustment with P3.
3. ST3 : For 50/60Hz selection use Jumper.ST3.
4. ST4 : Remove wire ST4 to Connect external potentiometer (1K Ω). Connect wire ST4 when it is not necessary to connect external potentiometer.
5. ST6 : Instantaneous Compensation for Voltage.
PS: Remove wire ST6 when the regulator is used in higher 600KVA.
6. ST7 : Jumpers connected.
7. J1 : Connected with LAM protection. Discounted without LAM protection. No LAM protection, for knee frequency adjustment use P4.
8. J2 : LAM voltage drop rate, 1-2 about 4.5V/Hz, 2-3 about 6.5V/Hz @ 220VAC.

2.2 Adjustment

1. P1 : Adjustment of quadrature droop. (Max 7%).
2. P2 : Output Voltage adjustment by using P2.

3. P3 : Stability.
4. P4 : Under-speed (U/F) and LAM protection: for knee frequency adjustable us P4.
5. P5 : Excitation over current adjustment use P5 : 3.5A ~ 10A.

2.3 Wiring

1. X1-X2 : Excitation power auxiliary winding input, single phase 2 wires.
2. Z1-Z2 : Harmonic Power input (Multi-Harmonic).
3. E+ : Positive Output Terminal for Excitation power.
4. E- : Negative Output Terminal for Excitation power.
5. 0 ~ 110 : Measure Power Input 110VAC.
6. 0 ~ 220 : Measure Power Input 220VAC.
7. 0 ~ 380 : Measure Power Input 380VAC.

Note :

1. When excitation power is three phase input, connect X2, X1, Z2. See Figure 3.
2. Fuse capacity : 10A / 250V.
3. When the regulator works normal, the LED will keep "Light" condition. The LED will be turned off when Stand-by power works in normal usual. In this condition, the rated voltage will decrease automatically and the voltage adjustment will failure

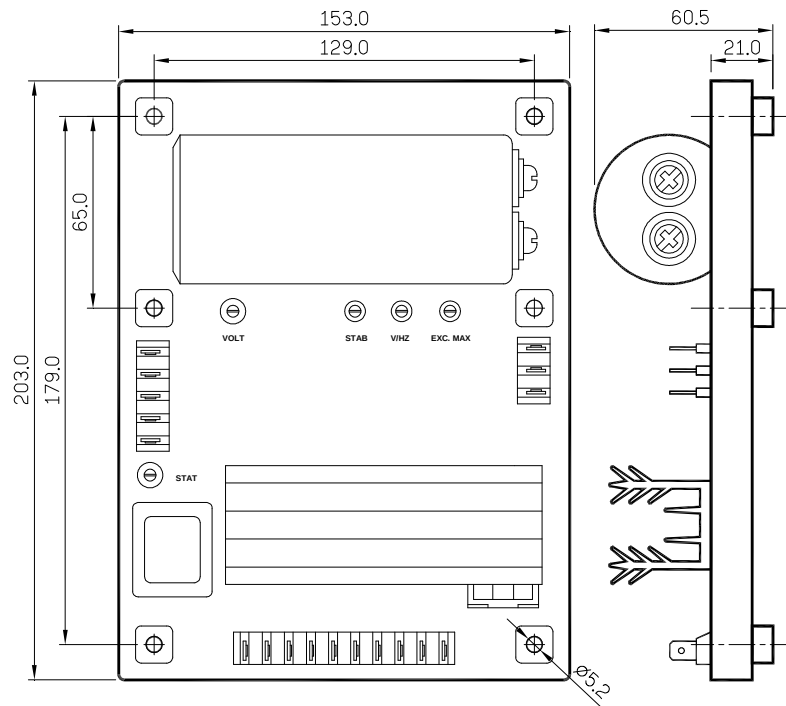


Figure 1 Outline Drawing

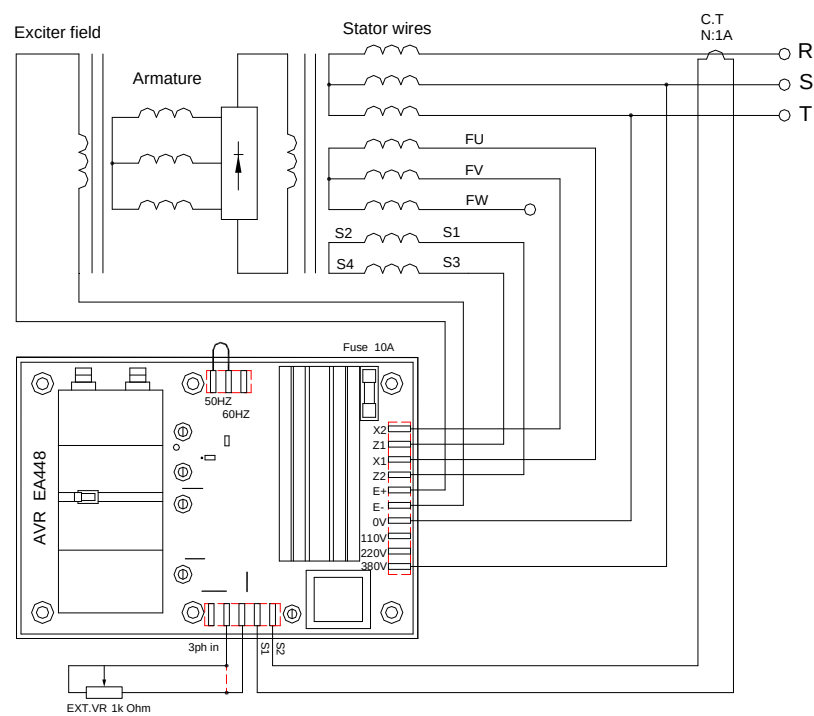


Figure 2 Power and Wiring for Harmonic Power

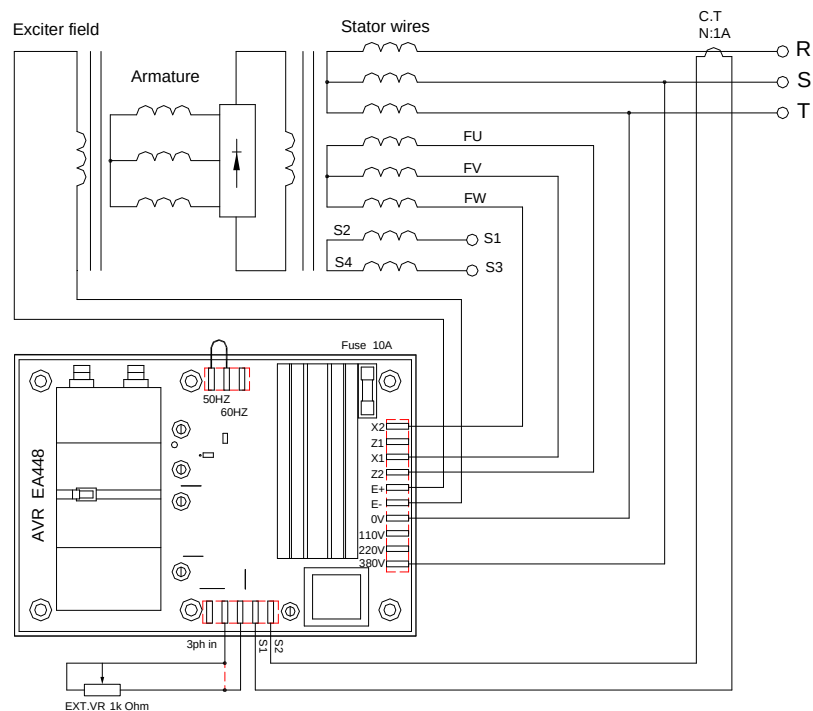


Figure 3 Three phase wiring

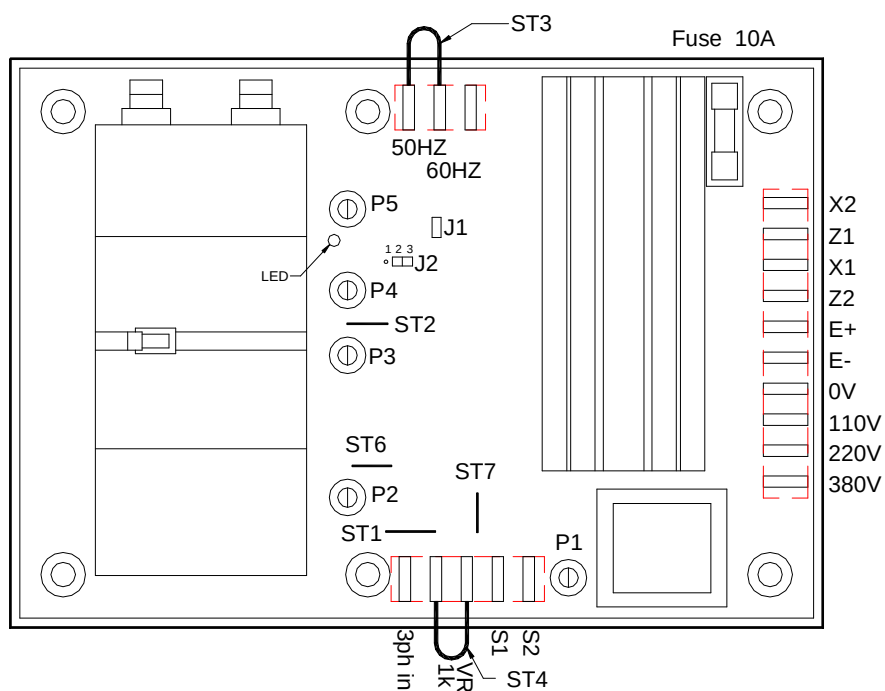


Figure 4 Adjustment and Jumper Diagram

- ※ Use only original supplied spare protection fuse for fuse replacement.
- ※ Please accept our sincere apology if any modification in performance, specification or appearance is made without prior notice.